

Remarks

Claim Cancellation

Please cancel Claim 22 without prejudice.

Claim Amendments

Claims 14 and 15 were amended to correct typographical errors in the claims, wherein the word "enhanced" was omitted from the claims. As noted in page 3, paragraph [0006], lines 1-2 and page 6, paragraph [0012], lines 1-2, the present invention provides "a computer linked to the multiplexed control means for storage, retrieval, and enhancement of images".

The Rejections of Claim 22 Under 35 U.S.C. §112 and 35 U.S.C. §103

Claim 22 was rejected under 35 U.S.C. 112, first paragraph and 35 U.S.C. §103(a). In light of the cancellation of this claim, Applicant respectfully notes that the rejection of this claim is now moot.

The Rejections of Claims 1-11 and 14-21 Under 35 U.S.C. §102

Claims 1-11 and 14-21 were rejected under 35 U.S.C. §102(b) as being anticipated by Zirm (USPN 5,376,007). Applicant respectfully traverses this rejection and requests reconsideration for the following reasons.

- (A) **Zirm Does Not Disclose a "Display Image Marker Means for Enabling Annotation by an Instructor" as Required by Claim 1**

Claim 1 specifically recites the element "a display image marker means for enabling said instructor to annotate said instruction image." Zirm does not disclose this element. Therefore, Zirm does not anticipate Claim 1, or any of its trailing dependent claims, under 35 U.S.C. §102.

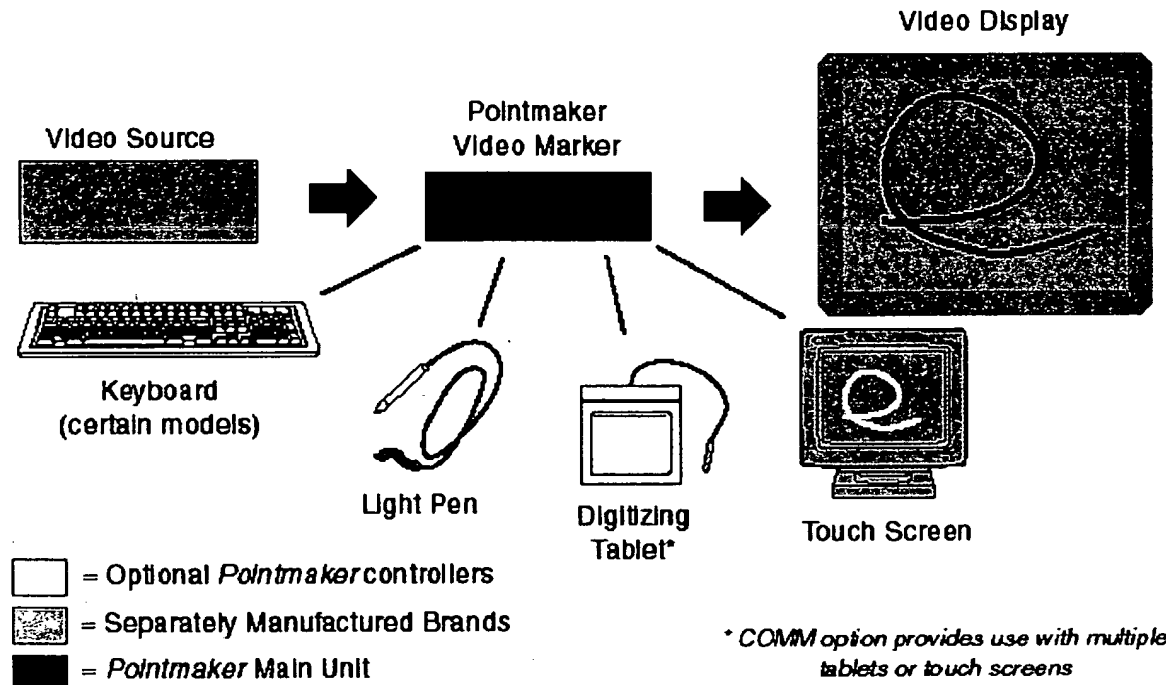
The Meaning of "Display Image Marker Means" and "Annotate"

The display image marker means of the invention is described in paragraph 14 of the specification as follows:

Microscopy laboratory system 110 also includes a commercially available display image marker 156. The POINTMAKER® PVI-44 Video Marker available from Boeckeler Instruments, Inc. is suitable for practicing the present invention. Display

image marker 156 is connected by standard video cable to receive an output image signal from multiplexer 120. A final instruction image signal, including any annotations added by way of display image marker 156, is supplied to projection unit 26 and to an optional videocassette recorder 160 operatively associated with instructor monitor 28. Consequently, it is possible to record instructional lessons and observed microscopic processes for future use.

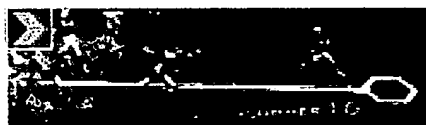
The display image marker allows an instructor to annotate an instruction image. The instructor can draw on-screen to circle important features of a video image, underscore for emphasis, or write important data on the image. Annotation can be accomplished by drawing on digitizer tablet 58 with pen 60. The annotated image appears on the video display, as illustrated herebelow:



(Source: www.boeckeler.com/pointmaker/pvigenbroch.html - web site which describes the POINTMAKER® PVI-44 Video Marker apparatus recited in the specification at paragraph 14, the data sheet of which is attached in the Appendix).

The display image marker means is similar in function to the well-known Telestrator apparatus, made famous by ABC Monday Night Football commentator John Madden. As every football fan knows, the Telestrator, a type of "display image marker" enables the commentator to

illustrate points about the game which are useful, or at least entertaining, to the viewer. An example of such use of a Telestrator display image marker means appears herebelow:



Just as the Telestrator allows John Madden to explain the subtleties and nuances of football to television viewers, the display image marker system of the present invention (Claim 1) enables an instructor to annotate images from a microscope to instruct her students. The annotation is visual, not auditory (as in Zirm). It is visual because Claim 1 specifically recites a display image marker.

The plain-meaning of the term “annotation” is “to add a brief explanation or opinion to a text or drawing” (Cambridge Advanced Learner’s Dictionary English) or “to make or furnish critical or explanatory notes or comment” (Merriam-Webster Dictionary). There is simply NO teaching in Zirm of these elements of Claim 1.

Finally, Zirm discloses a method of teaching students remotely via video and audio. The fact is that Zirm does not explicitly or implicitly teach “a display image marker means” or “annotation”. It is important to note that the terms “image marker” and “annotation” appear nowhere in the Zirm reference.

Examiner states that “a display image marker means connected to said multiplexed control means for enabling said instructor to annotate said instruction image” can be found in Zirm, column 4, lines 20-47. Even reading Zirm broadly, these features are not found anywhere in the patent and certainly not in the lines indicated. These lines specifically disclose a method for teaching students microsurgical operation techniques of the eye during which pressure measurements may be taken to determine tissue damage. Recording pressure measurements of the eye is simply not the same thing as “annotating” a video image.

(B) Zirm Does Not Disclose a "Display Means Connected to a Multiplexed Control Means" as Required by Claim 1

Claim 1 specifically recites the element “display means connected to said multiplexed control means”. Zirm does not disclose this element. Therefore, Zirm does not anticipate Claim 1, or any of its trailing dependent claims, under 35 U.S.C. §102.

(1) Zirm Does Not Teach or Disclose a Video Multiplexer

The multiplexed control means of Claim 1 multiplexes video signals (this is clear from the fact that the display means [which displays images from video signals] is connected to the multiplexed control means). Zirm does not disclose a video multiplexer. Rather, he discloses a video distributor 17. This video distributor is not a multiplexer, or a multiplexed control means as required by Claim 1.

As is well-known, a multiplexer is, "a device for combining two or more signals" (McGraw-Hill Dictionary of Scientific and Technical Terms, 5th Edition, Page 1309, 1994). A multiplexer is an efficient way of combining a plurality of signals for transmission along a single path. Once multiplexed, the combined signals must be demultiplexed by a demultiplexer, that is, by "A device used to separate two or more signals that were previously combined by a compatible multiplexer and

transmitted over a single channel." (McGraw-Hill Dictionary of Scientific and Technical Terms, 5th Edition, Page 540, 1994). Multiplexing and demultiplexing are automatic processes achieved by special electronic circuits. They obviate the need for manual operations, i.e., pushbuttons.

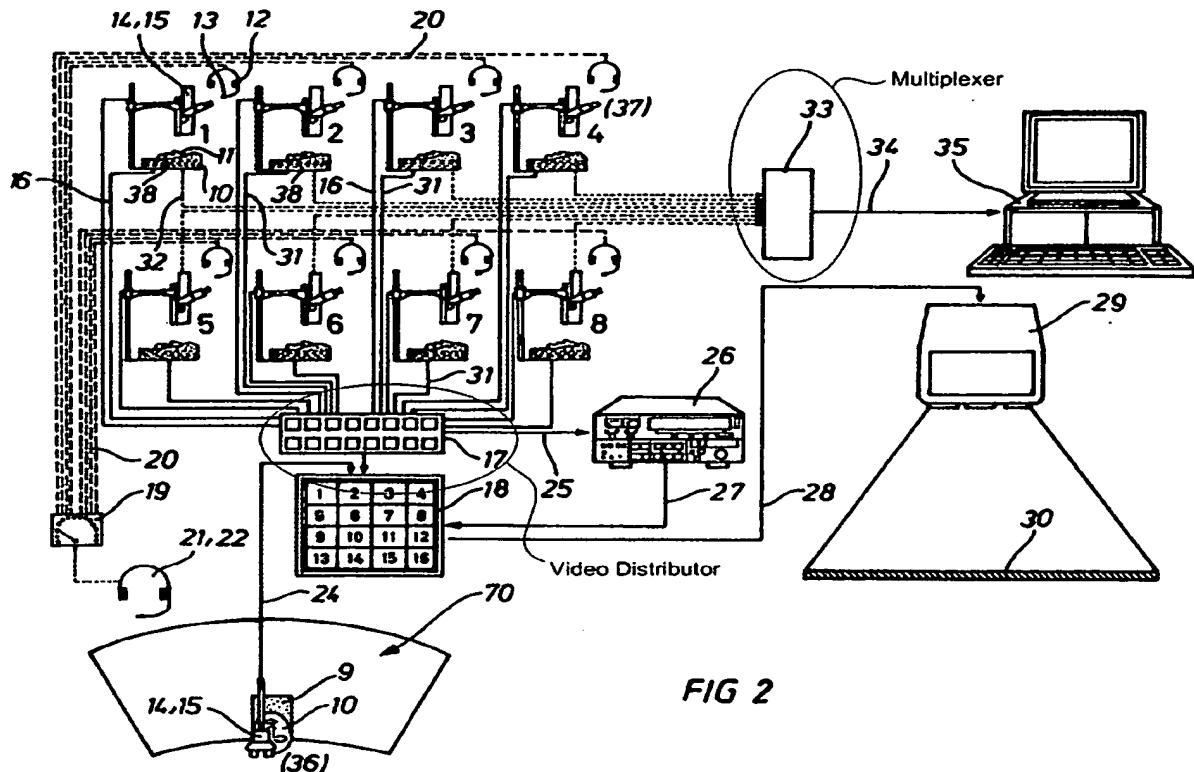
It is clear that Zirm does not teach the use of a video multiplexer. First, as clearly shown in Figures 1 and 2, the video signals from the microscopes are all fed into device 17, described in the specification as a video distributor, and not as a multiplexer. If device 17 was a multiplexer, the video signals from the microscopes are all fed into device 17, described in the specification as a video distributor, and not as a multiplexer. If device 17 was a multiplexer, Zirm would have called it a multiplexer. He did not. (Zirm specifically recites and describes a data multiplexer 33, for combining pressure measurement signals into a single channel - so clearly he knows what a multiplexer is, and yet device 17 is described as a "video distributor" and not a "video multiplexer".)

A telltale sign that device 17 is not a multiplexer, and that Zirm does not use a multiplexer to combine the video signals from the plurality of microscopes appears in Col. 4, lines 47-55:

From the foregoing it is also observed that a great advantage of the operation techniques disclosed result in great benefits in teaching technique, since the teacher at the station 36, **by means of depressing a button in the video distributor 17** and a button in the audio distributor 19, can at any time establish oral communication between the teacher and each individual student, as well as to display the video picture of the operation field of this student alone on the multiple-field monitor 18. (emphasis added.)

Multiplexers don't have or require pushbuttons! Buttons are required to manually select signals to be displayed because Zirm doesn't use a multiplexer to combine the signals automatically!

Another telltale sign that device 17 is not a multiplexer appears in Figures 1 and 2. As shown in these drawings, video distributor 17 is shown as a rectangular box with sixteen (16) smaller rectangles therein. Presumably, the sixteen (16) smaller rectangles denote pushbuttons. As shown in Figure 2, reprinted and annotated herein below, multiplexer 33 is shown as a plain rectangle, whereas video distributor 17 is shown as a rectangle with a plurality of smaller rectangles therein:



(2) Zirm's Multiplexer

Zirm does teach a multiplexer. But Zirm's multiplexer 33 is used to multiplex data signals from pressure transducers, and not video signals. In column 2, line 53-57, Zirm discloses that, "The signals from such [pressure or geometrical] measurements are digitalized and sent over a multiplexer to a computer, which then may be utilized for summing up the entire operation, and providing a test certificate." Thus, the Zirm multiplexer is used for gathering and analysis of pressure data. It is an independent component, separate from the video image loop. This is reiterated in Fig. 2, component 33 and column 4, lines 37-42 which states, "The conductors 32 (FIG. 2 upper left) of this measuring device lead to a measurement data accumulation component 33, which for example is constituted by a digital multiplexer, and from the exit of the latter, a conductor 34 leads to a computer 35, which collects and computes the data in digital form." This emphasizes again that the multiplexer is NOT in the video loop, i.e., it is NOT connected in the part of the circuit that multiplexes display images.

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Thus, although Zirm has a multiplexer, it is not in the video loop, and it is used to multiplex pressure signals, not video signals.

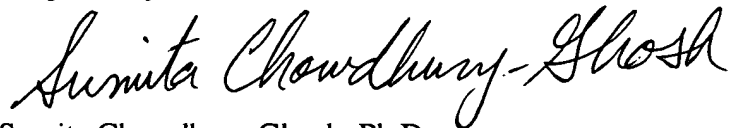
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Conclusion

The foregoing is submitted as a full and complete Reply to Office Action. For all of the reasons set forth above, Zirm does not anticipate Claims 1-21, and Applicant respectfully submits that the present application is now in condition for allowance, which action is courteously requested.

The Examiner is invited to contact the undersigned agent of record if such contact will facilitate an efficient examination and allowance of the application.

Respectfully submitted,



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